

The background is a solid blue color. At the top, there are several white, stylized clouds with black outlines. On the left side, there is a tall, dark blue skyscraper with many windows, resembling the Empire State Building. At the bottom, there is a dark blue silhouette of a city skyline with various buildings. In the center, there is a white rectangular box with a black border. Inside this box, the text "CRIME IN BOSTON" is written in a bold, black, italicized sans-serif font.

CRIME IN BOSTON

Prepared and presented by:
Kevin



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RECOMMENDATION

Provide feasible points
of improvement





OUR POSITION

Kevin (Presenter)

– Criminology Consultant

Audience

– The Boston Police Department



Audience's Client (System
Implementer)

– Police Dispatch Manager or authorized staff
under Boston Police Department responsible for
field officer management



DATA PROFILING

Preliminary analysis of the data





HOW FAR SHOULD WE GO ?



<p>Source: kaggle</p> <p>https://www.kaggle.com/datasets/AnalyzeBoston/crimes-in-boston</p> <p>by Analyze Boston</p>	<p>Location</p> <p>Boston, Massachusetts, United States of America</p>
<p>Time Span</p> <p>14 June 2015 – 3 September 2018</p>	<p>System</p> <p>New Crime Incident Report System (focused on when & where incident occur)</p>





WHAT DO WE GOT ?



Unutilized Data : Street Name

INCIDENT NUMBER (Primary Key)	Offense Code Code, Name, Group and Descriptions
Crime Location District, Reporting Area, Street Name , Coordinates	Crime Details Time (Date and Time), Shooting (Y/N), UCR category





?

PROBLEM STATEMENT



THE BIG PICTURE

- FBI: US saw about **25 percent more homicides** in 2020 than in 2019 (WashingtonPost)
- Homicides in **Boston** almost **doubled** from 37 in 2019 to 57 cases in 2020 (Boston.com)
- Police officers create **guardianship** by reminding individuals of the rule of law... So, the **physical presence or absence** of police in time and space **influences** individual offenders in their **decision** to commit crime ("Analysing the Police Patrol Routing Problem: A Review" by Dewinter, M., et al. (2020))





FOLLOW-UP QUESTIONS

1. Which **police's actions** were the most taken for incidents in Boston?
2. How's the **trend** of number of police actions taken by year?
3. Was there any **tendency** of police being **busier on weekends**?
4. Which police's actions were the most taken **by each of Uniform Crime Reporting (UCR)** part?
5. During what time the **police were the busiest**?
6. Which **districts** need police's assistance the most and where were the **hot-spots** for crime action in the city of Boston?



INSIGHT EXTRACTION



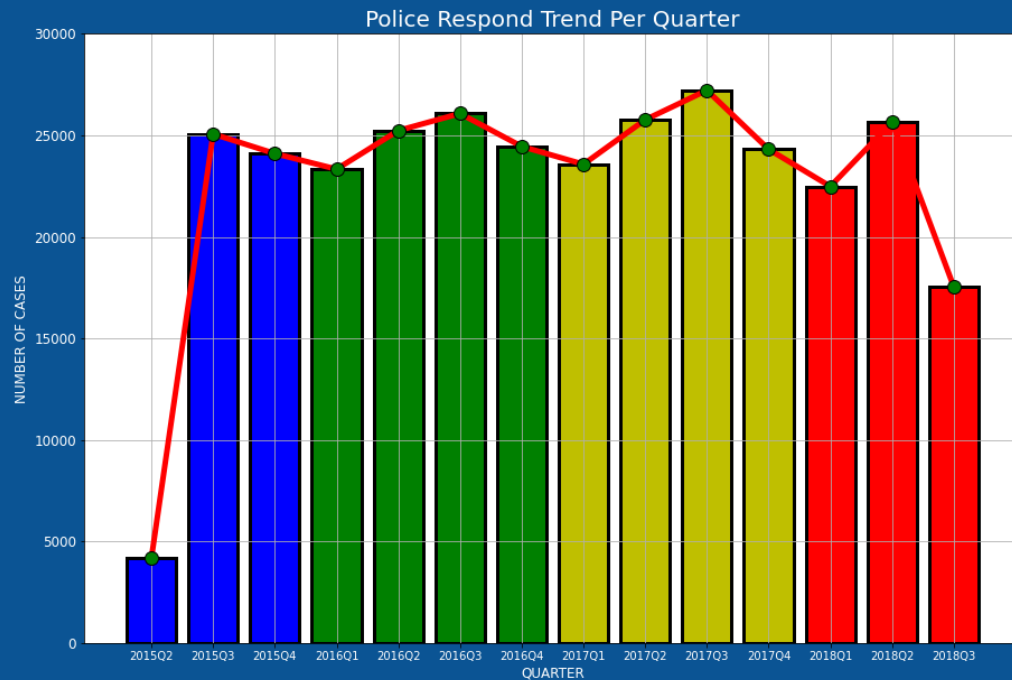
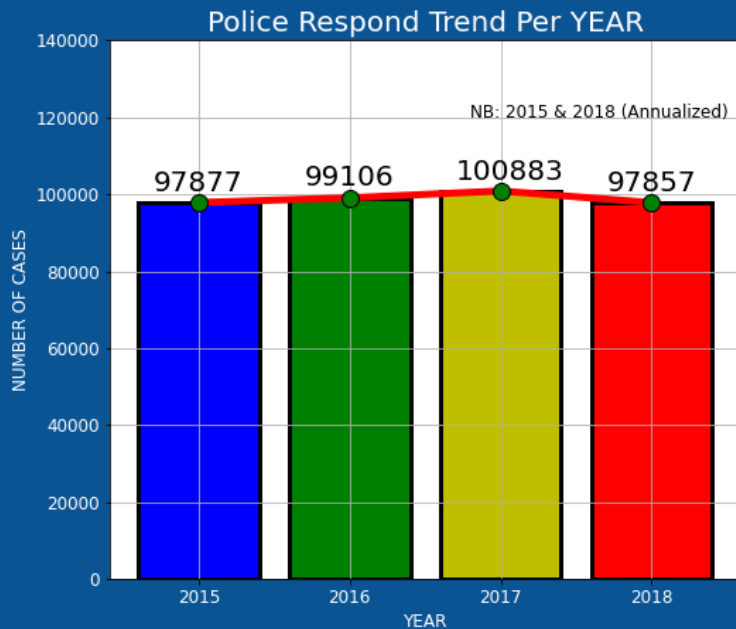
1. ACTIONS TAKEN BY POLICE

Offense Code	Offense Code Group	Offense Description	Number of Cases	%
3006	Medical Assistance	SICK/INJURED/MEDICAL - PERSON	18,783	5.89
3115	Investigate Person	INVESTIGATE PERSON	18,747	5.88
3831	Motor Vehicle Accident Response	M/V - LEAVING SCENE - PROPERTY DAMAGE	16,323	5.12
1402	Vandalism	VANDALISM	15,153	4.75
802	Simple Assault	ASSAULT & BATTERY	14,797	4.64

1. ACTIONS TAKEN BY POLICE

Insights	Recommendation
Actions taken the most by the police were giving medical assistance to individuals in crime scene	Give field police officers first-aid training based on DRSABC (Danger, Response, Shout, Airway, Breathing, Compression) method <i>Reference: dr. Kevin Adrian Djantini</i>
	Make good coordination with medical assistance/provider near city's hot-spots (refer to question no.6) and make sure they have reliable medical facilities
Investigation to individuals were the second most actions taken by police officers (followed by investigation to property in rank 8)	Recruit more experienced sheriffs, professional criminologist or persons needed to perform investigation if necessary.

2. TREND



2. TREND

Insights	Recommendation
Number of yearly cases show stable form without any growth or decrease of cases with around 100,000 cases per year. Police's strategies and programs to tackle crime actions were not effective.	Boston Police Department need to formulate some breakthrough programs to push down crime rate in city of Boston without any support of fire rifles . For past few years, police brutality issues has been the trending topic in the US (The Guardian), so some of actions could be in form of (Vox): <ol style="list-style-type: none">1. Stricter Alcohol Policies2. Hot-Spot Policing3. Focused Deterrence Policing4. Prevent Dropping Out of School Cases5. Behavioral Intervention Programs6. Eliminated Blighted Housing
Number of cases per quarter also show stable form, around 25,000 cases per quarter and peaked at 2017Q3.	

3. BUSY ON WEEKENDS

"DO HOMICIDE RATES INCREASE DURING WEEKENDS AND NATIONAL HOLIDAYS?" BY BAIRD, ALISON, ET AL. (2019)

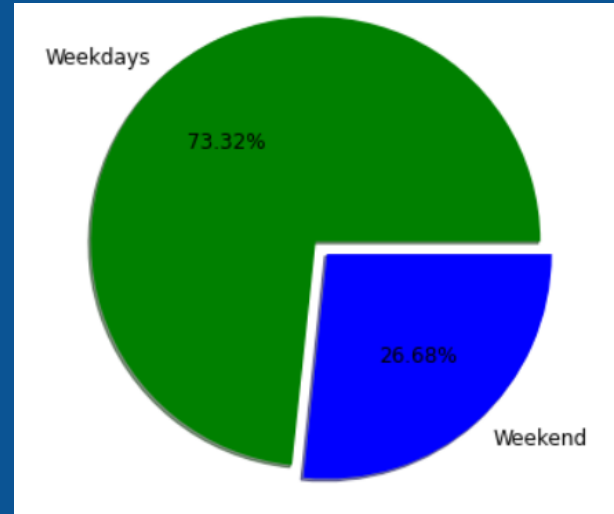
HYPOTHESIS TESTING

Null Hypothesis: Proportion of police's actions on weekends is equal to 50%

Alternative Hypothesis: Proportion of police's actions on weekends is lower than 50%

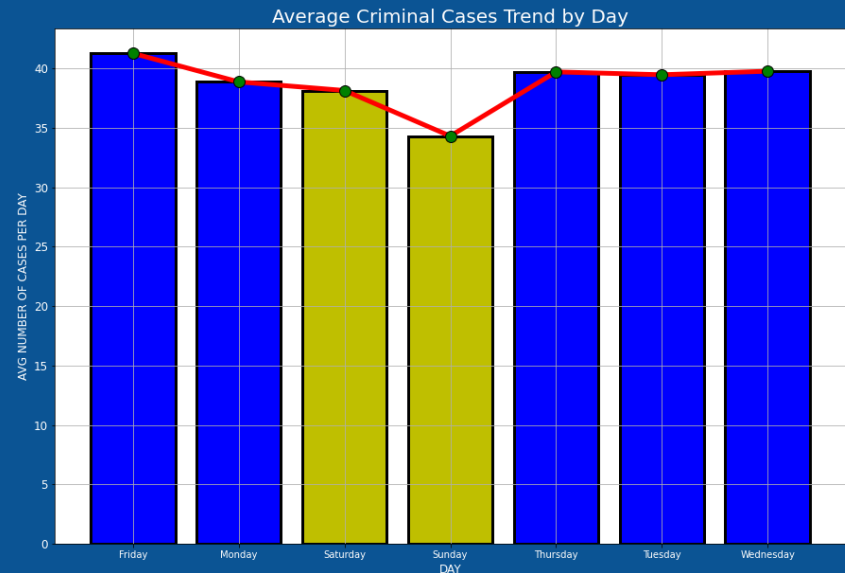
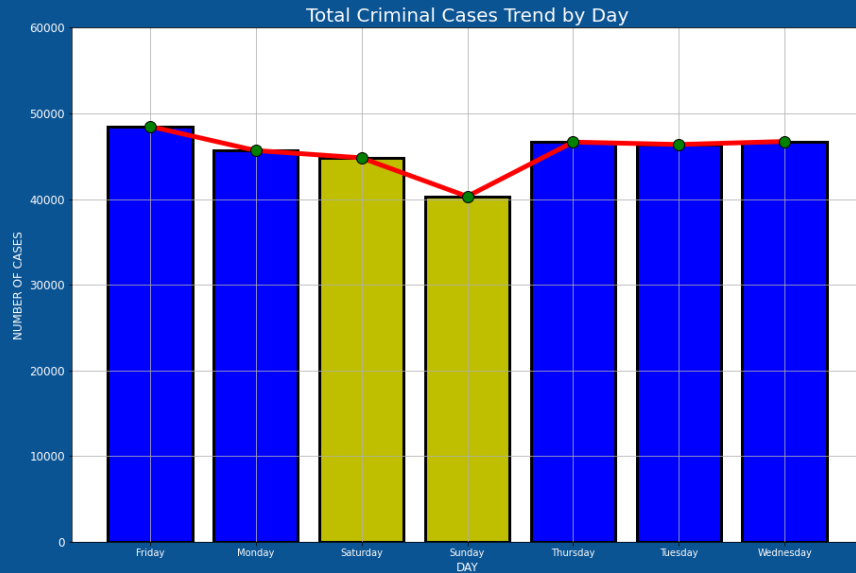
P-value/2: 0.03183261613809501

Result: Null hypothesis is rejected



3. BUSY ON WEEKENDS

"DO HOMICIDE RATES INCREASE DURING WEEKENDS AND NATIONAL HOLIDAYS?" BY BAIRD, ALISON, ET AL. (2019)



3. BUSY ON WEEKENDS

Insights	Recommendation
Proportion of police's respond on weekends are significantly lower than weekdays mostly cause by difference in number of days between those two categories : 5 days vs 2 days.	Since the difference between number of police respond each day is not significant, no special attention need to be given to a particular day in a week
When being compared separately as a single day compared to another day, days on weekends (Saturday and Sunday) are lower in number of police respond to any other day in the weekdays category.	
Boston is ranked 9th in 10 biggest metropolitan cities in the US in terms of crime rate (source: FBI)	Apply strategies in point number 2 to push down crime number which has been stagnant within years

4. *UNIFORM CRIME REPORTING (UCR)*

Crime	Cases	%
SICK/INJURED /MEDICAL - PERSON	18,783	11.85
INVESTIGATE PERSON	18,747	11.83
M/V - LEAVING SCENE - PROPERTY DAMAGE	16,323	10.30
VERBAL DISPUTE	13,099	8.26

UCR_PART	Number of Cases	%
Part Three	158,535	49.69
Part Two	97,557	30.58
Part One	61,625	19.32
Part Four	1,232	0.39

Crime	Cases	%
VANDALISM	15,153	15.53
ASSAULT & BATTERY	14,797	15.17
THREATS TO DO BODILY HARM	9,042	9.27
FRAUD - FALSE PRETENSE	4,414	4.52

Crime	Cases	%
LARCENY IN A BUILDING \$200 & OVER	9,073	14.72
LARCENY THEFT FROM MV - NON-ACCESSORY	8,894	14.43
LARCENY SHOPLIFTING \$200 & OVER	7,952	12.90
LARCENY OTHER \$200 & OVER	5,970	9.69

4. UNIFORM CRIME REPORTING (UCR)

Incident Number	Offense Code	Offense Code Group	Description	UCR Part
I080542626-00	1848	Drug Violation	DRUGS - POSS CLASS B - INTENT TO MFR DIST DISP	Part Two
I080542626-00	1849	Drug Violation	DRUGS - POSS CLASS B - COCAINE, ETC.	Part Two
I080542626-00	3125	Warrant Arrest	WARRANT ARREST	Part Three

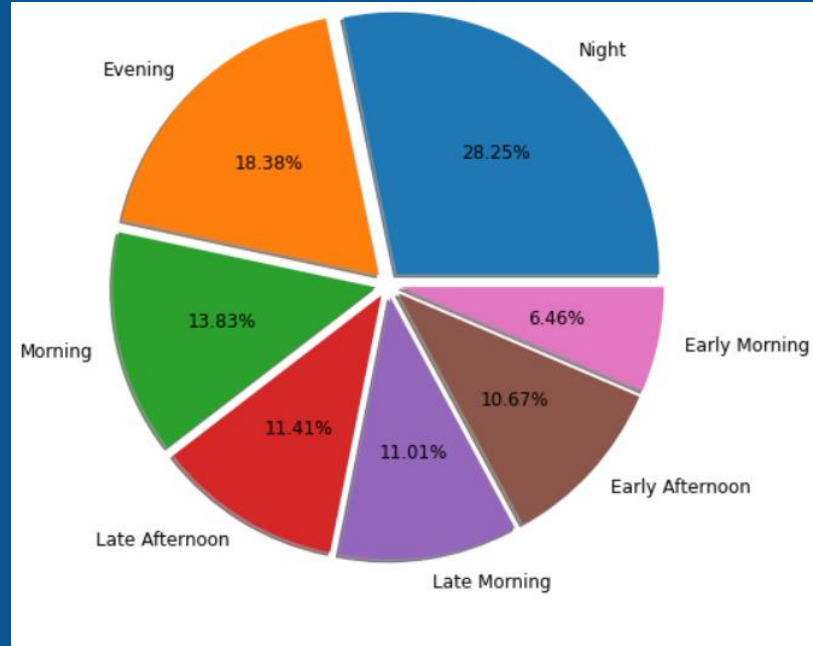
4. UNIFORM CRIME REPORTING (UCR)

Insights	Recommendation
UCR system can effectively categorize police's action according to the appropriate UCR Part in the reporting system. However, 1 Incident Number could represent several different actions performed by the police	Formulate new incident numbering format including unique code to separate each actions performed in 1 same incident.

5. BUSY HOURS

IN WEEKDAYS, SIMPLE ASSAULT HAPPEN IN DAYLIGHT WHILE SERIOUS CRIME HAPPEN ON NIGHT (THE SLEEP JUDGE)

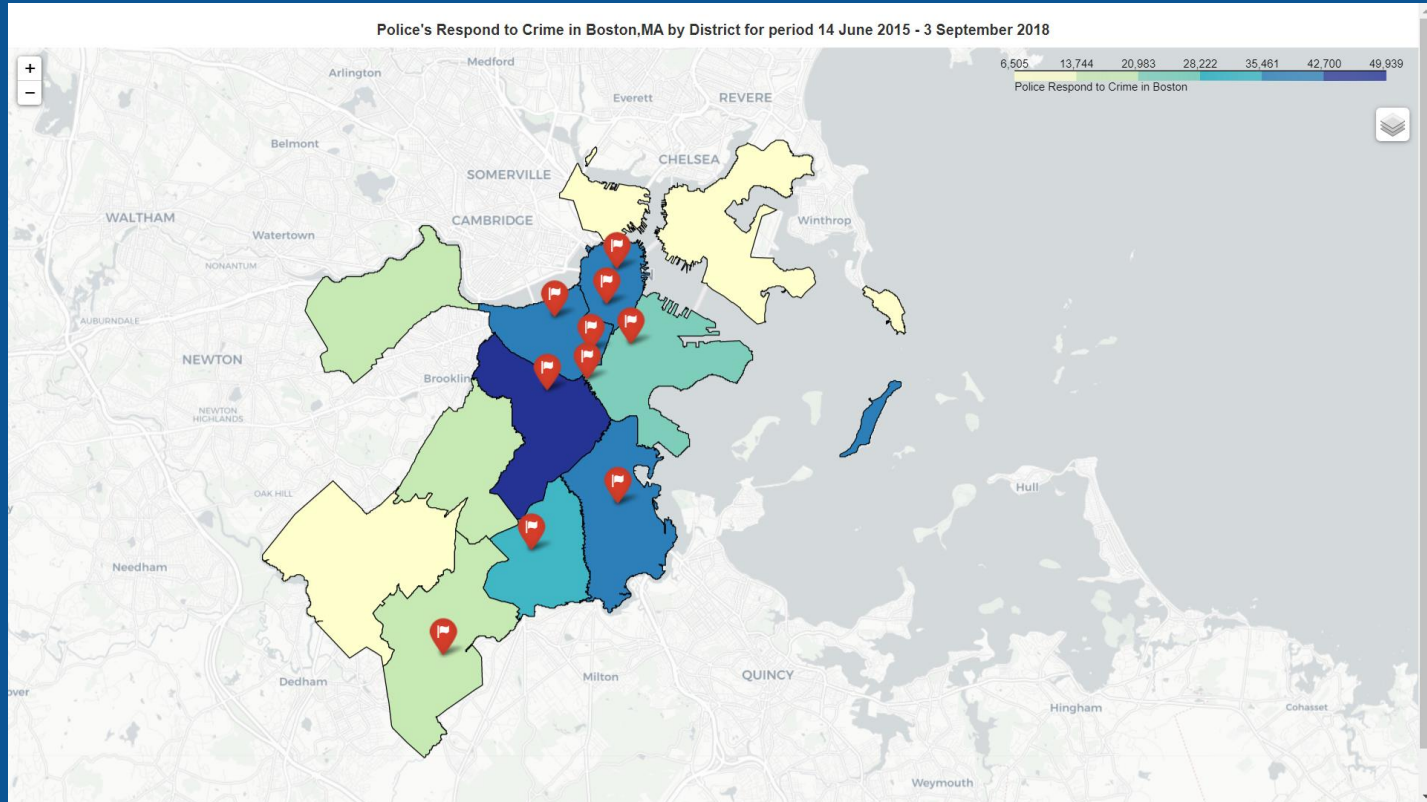
Category	From	To
Early Morning	05.00	07.59
Morning	08.00	10.59
Late Morning	11.00	12.59
Early Afternoon	13.00	14.59
Late Afternoon	15.00	16.59
Evening	17.00	19.59
Night	20.00	04.59



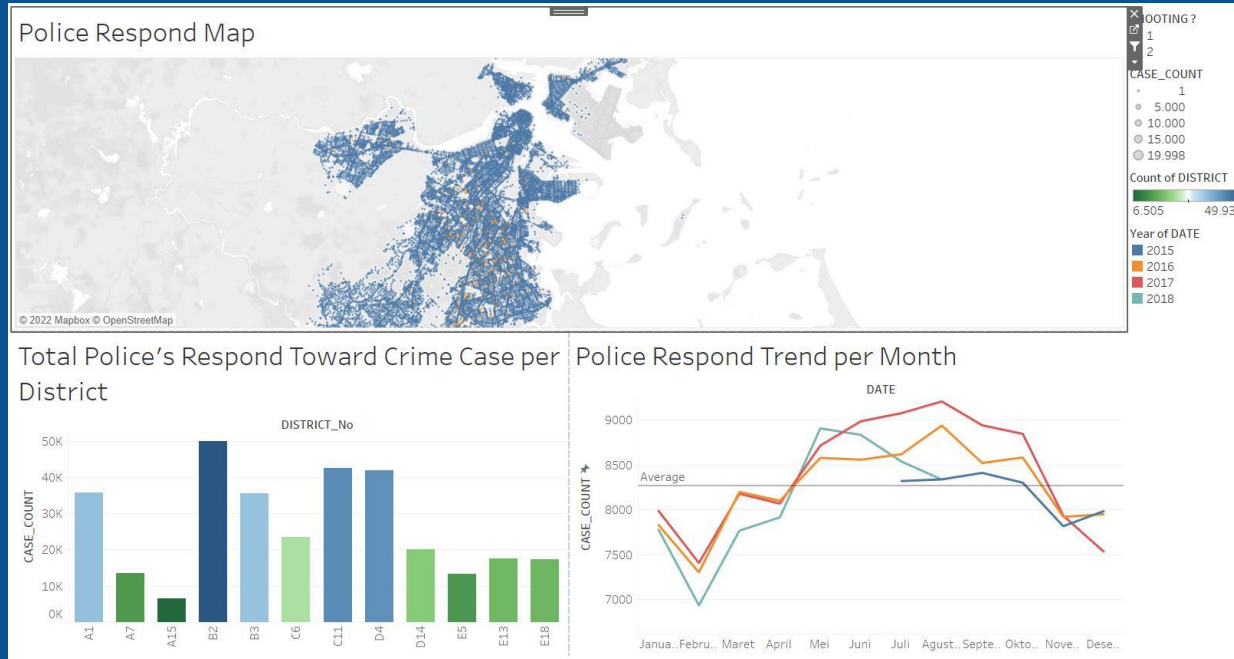
5. *BUSY HOURS*

Insights	Recommendation
Night is the period when police had the most activity during the day, however, night is also the longest time period in a day (9 hours vs 2-3 hours)	1. Based on study by The Sleep Judge, serious crime tends to happen more on night rather than daylight. Boston Police Department need to have additional field officer standby on night.
When combined, proportion of actions taken within Evening + Night (total 12 hours) is lower than 50%, therefore police is busier during daytime than night time.	2. Police need to adjust the working shift for field officer to accommodate more activities on daylight, by having shift switch on early morning and late afternoon since those are the time when activities were the lowest.

6. BOSTON'S HOT-SPOTS



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<https://tabsoft.co/3bKDdXw>

6. BOSTON'S HOT-SPOTS

Insights	Recommendation
Roxbury is the busiest districts for the police, followed by Downtown, South End and Dorchester.	<ol style="list-style-type: none">1. Boston Police Department need to pay attention to 10 specific hot-spots detected2. Director need to create a special unit to patrol and control area from north of Downtown to north of Roxbury.
Area from north of Downtown to north of Roxbury contain 7 hot-spots of the city.	
District in far south and far north of the city represent low level of activities for police.	



CONCLUSION

01

TRAINING

Deploy first-aid and investigation training program

02

NO GUNS

Don't use fire rifles to control crime but crime rate still need to be pushed down

03


INCIDENT NUMBER

Need to formulate new numbering format for UCR System

04

CONTROL HOT-SPOTS

Focus more on center of the city and specifically around Roxbury





THANKS!

Do you have any questions?
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